

### § 34.63

be specified and/or approved by the Administrator:

Mode	Class		
	TP	TF, T3, T8	TSS
Taxi/Idle .....	(*)	(*)	(*)
Takeoff .....	100	100	100
Climbout .....	90	85	65
Descent .....	NA	NA	15
Approach .....	30	30	34

\*See paragraph (a) of this section.

(2) The taxi/idle operating modes shall be carried out at a power setting of 7% rated thrust unless the Administrator determines that the unique characteristics of an engine model undergoing certification testing at 7% would result in substantially different HC and CO emissions than if the engine model were tested at the manufacturers recommended idle power setting. In such cases the Administrator shall specify an alternative test condition.

(3) The times in mode (TIM) shall be as specified below:

Mode	Class		
	TP	TF, T3, T8	TSS
Taxi/Idle .....	26.0 Min.	26.0 Min.	26.0 Min.
Takeoff .....	0.5	0.7	1.2
Climbout .....	2.5	2.2	2.0
Descent .....	N/A	N/A	1.2
Approach .....	4.5	4.0	2.3

(b) Emissions testing shall be conducted on warmed-up engines which have achieved a steady operating temperature.

[Doc. No. 25613, 55 FR 32861, Aug. 10, 1990; 55 FR 37287, Sept. 10, 1990, as amended by Amdt. 34-3, 64 FR 5559, Feb. 3, 1999]

### § 34.63 [Reserved]

### § 34.64 Sampling and analytical procedures for measuring gaseous exhaust emissions.

The system and procedure for sampling and measurement of gaseous emissions shall be as specified by in Appendices 3 and 5 to the International Civil Aviation Organization (ICAO) Annex 16, Environmental Protection, Volume II, Aircraft Engine Emissions, Second Edition, July 1993, effective July 26, 1993, through Amendment 3 (March 20, 1997). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

### 14 CFR Ch. I (1-1-11 Edition)

This document can be obtained from the International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or <http://icaodsu.openface.ca/mainpage.ch2>. Copies can be reviewed at the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

[Doc. No. FAA-2009-0112, 74 FR 19127, Apr. 28, 2009]

### 34.65-34.70 [Reserved]

### § 34.71 Compliance with gaseous emission standards.

Compliance with each gaseous emission standard by an aircraft engine shall be determined by comparing the pollutant level in grams/kilowatt/thrust/cycle or grams/kilowatt/cycle as calculated in § 34.64 with the applicable emission standard under this part. An acceptable alternative to testing every engine is described in Appendix 6 to ICAO Annex 16, Environmental Protection, Volume II, Aircraft Engine Emissions, Second Edition, July 1993, effective July 26, 1993, including all amendments through Amendment 3 (March 20, 1997). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document can be obtained from the International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or <http://icaodsu.openface.ca/mainpage.ch2>. Copies can be reviewed at the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/](http://www.archives.gov/federal_register/)

*code\_of\_federal\_regulations/ibr\_locations.html*. Other methods of demonstrating compliance may be approved by the FAA Administrator with the concurrence of the Administrator of the EPA.

[Doc. No. FAA-2009-0112, 74 FR 19128, Apr. 28, 2009]

## Subpart H—Test Procedures for Engine Smoke Emissions (Aircraft Gas Turbine Engines)

### § 34.80 Introduction.

Except as provided under § 34.5, the procedures described in this subpart shall constitute the test program to be used to determine the conformity of new and in-use gas turbine engines with the applicable standards set forth in this part. The test is essentially the same as that described in §§ 34.60–34.62, except that the test is designed to determine the smoke emission level at various operating points representative of engine usage in aircraft. Other smoke measurement systems may be used if shown to yield equivalent results and if approved in advance by the Administrator or the Administrator of the EPA.

### § 34.81 Fuel specifications.

Fuel having specifications as provided in § 34.61 shall be used in smoke emission testing.

### § 34.82 Sampling and analytical procedures for measuring smoke exhaust emissions.

The system and procedures for sampling and measurement of smoke emissions shall be as specified by Appendix 2 to ICAO Annex 16, Environmental Protection, Volume II, Aircraft Engine Emissions, Second Edition, July 1993, effective July 26, 1993, through Amendment 3 (March 20, 1997). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document can be obtained from the International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or <http://icaodsu.openface.ca/mainpage.ch2>. Copies can be reviewed at

the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

[Doc. No. FAA-2009-0112, 74 FR 19128, Apr. 28, 2009; Amdt. 34-4, 74 FR 26779, June 4, 2009]

### 34.83–34.88 [Reserved]

### § 34.89 Compliance with smoke emission standards.

Compliance with each smoke emission standard shall be determined by comparing the plot of SN as a function of power setting under the applicable emission standard under this part. The SN at every power setting must be such that there is a high degree of confidence that the standard will not be exceeded by any engine of the model being tested. An acceptable alternative to testing every engine is described in Appendix 6 to ICAO Annex 16, Environmental Protection, Volume II, Aircraft Engine Emissions, Second Edition, July 1993, effective July 16, 1993, including all amendments through Amendment 3 of March 20, 1997. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document can be obtained from the International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or <http://icaodsu.openface.ca/mainpage.ch2>. Copies can be reviewed at the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). Other methods of demonstrating compliance may be approved by the FAA Administrator with